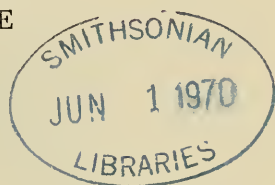


PROCEEDINGS
OF THE
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THREE NEW SPECIES OF CALLIANASSID SHRIMP
(DECAPODA, THALASSINIDEA) FROM THE
WESTERN ATLANTIC¹

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Three new species of *Callianassa* were discovered during a recent study of the callianassid fauna of South Florida. Since the comprehensive publication will not appear for some time, it was deemed best to publish the descriptions of the new species separately.

Specimens of the new species described below were first collected by the author in South Florida in 1967, but these specimens were later destroyed. Fortunately, additional material was available from other sources. I am most grateful to Mr. William Lyons of the Florida Board of Conservation Marine Laboratory, St. Petersburg (FBCML), for the loan of specimens of *Callianassa trilobata* dredged from Tampa Bay. I am indebted to Dr. Raymond B. Manning, Smithsonian Institution (USNM), for his assistance on a number of occasions and for the loans of specimens and to Dr. Herbert W. Levi of the Museum of Comparative Zoology (MCZ) for the loan of material containing specimens of all three new species.

The material at the National Museum of Natural History was examined during a trip sponsored by the Office of Academic Affairs of the Smithsonian Institution. During a

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portion of the study, the author was supported by a National Science Foundation traineeship.

Measurements given for specimens refer to total length. The term P3 is an abbreviation for third pereopod. Other legs are referred to similarly.

***Callianassa trilobata* new species**

Figure 1

Holotype: 1 ♂, 76 mm; Florida, Tampa Bay, off Pinellas Point; 18 January 1968; R. Stokes. EJ-68-2 (FBCML).

Paratypes: 1 ♀, 66 mm; Florida, Miami, Virginia Key, Bear Cut beach; 12 April 1959; R. Manning. USNM.

1 juvenile, 35.5 mm; Florida, Biscayne Bay; March–April 1937; H. L. Clark. MCZ 9697.

2 ♀ ♀, 77–80.5 mm; Florida, Tampa Bay, SW of Bayboro Harbor; 2–4 m; 16–17 January 1968; R. Stokes. EJ-68-1 (FBCML).

1 damaged ♀; Florida, Tampa Bay, off Bayboro Harbor; 2.5–3.5 m; 22 February 1968; Stokes and Lyons. EJ-68-7 (FBCML).

1 ♂, 60 mm, 1 damaged ♂, 8 ♀ ♀, 39.5–77.5 mm; Florida, Tampa Bay, off Pinellas Point; 2–3 m; 18 January 1968; R. Stokes. EJ-68-2 (FBCML).

Diagnosis: Front with three low, subtriangular projections. Telson trilobed laterally, much wider than long. Large cheliped with triangular ventral keel on merus. Eye of fresh specimen with white spot in center of pigmented area.

Description: Rostrum and lateral projections short rounded triangles. Rostrum 0.2 times length of eyestalks. Lateral projections situated between eyestalks and base of antennal peduncle. Eyestalks flattened, not reaching tip of first antennular segment, length 1.45–2.0 times width; lateral margins straight, directed slightly inward; distal margins straight, more obliquely directed, lacking distal projections; pigmented area central, slightly convex, elongate longitudinally, covering about 0.5 exposed dorsal surface of eyestalk; cornea small, subterminal, covering about 0.2 pigmented area. Dorsal carapace posterior to cervical groove with median prominence set off by oblique ridges.

Third segment of antennule 1–1.4 times length of second segment. Third antennular segment 0.6–0.9 times length of fourth antennular segment. Fourth antennular segment 1.25–1.85 times length of fifth segment. Antennal flagellum 2.5–4.3 times length of antennular. Second segment of antennule reaching 0.6 length of fourth antennular segment. Third antennular segment to 0.25 fifth antennular segment. Second and third segments of antennule with dense rows of elongate setae on their lateral surfaces. Third segment of antenna with numerous elongate setae laterally.

Incisor process of mandible with 16 acute teeth of varying sizes

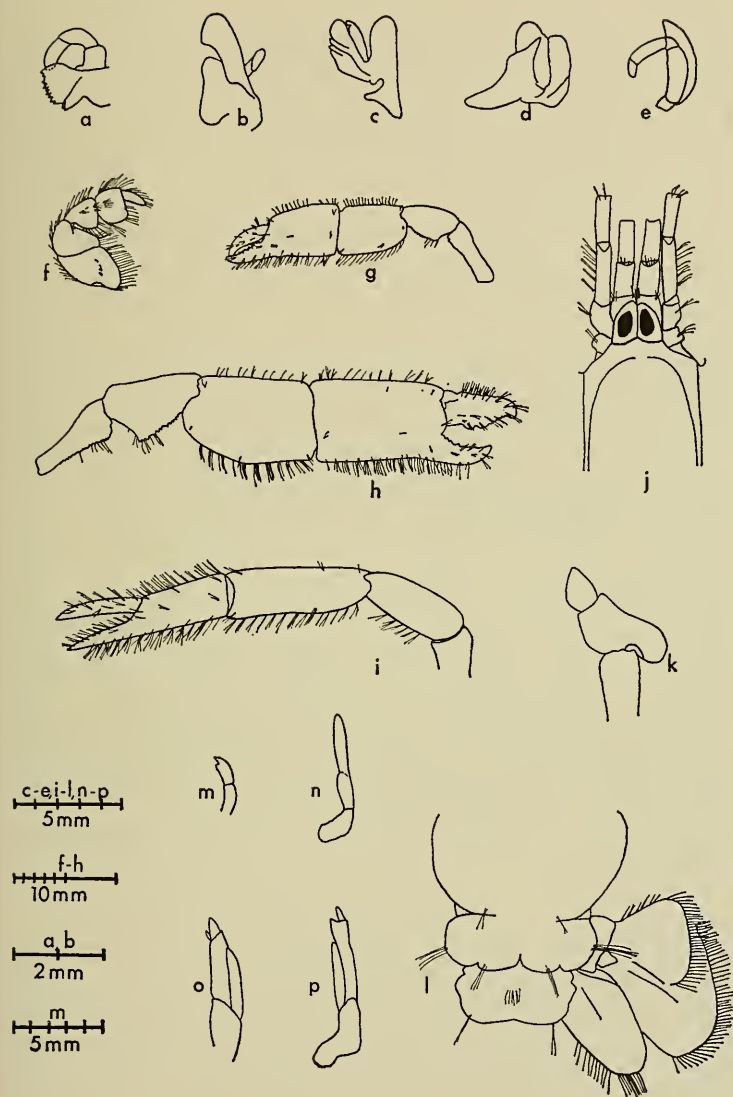


FIG. 1. *Callianassa trilobata*: a, mandible; b, first maxilla; c, second maxilla; d, first maxilliped; e, second maxilliped; f, third maxilliped; g, female large cheliped; h, male large cheliped; i, small cheliped; j, dorsum; k, P3; l, tail fan; m, male first pleopod; n, female first pleopod; o, male second pleopod; p, female second pleopod.

extending along entire margin, molar process bifurcate ventrally, tips acute, remainder of process entire. First maxilla with wide basal endite, slightly expanded distally, margin rounded; coxal endite with narrow, rounded distal lobe. Epipod of first maxilliped triangular, broadly rounded laterally; basal endite with straight lateral margins, rounded tip; exopod not distinctly bilobed, slight indentation on inner margin. Second maxilliped with exopod longer (1.5) than first segment of endopod. Merus and ischium of third maxilliped wide, length of both segments 1.5–2.0 times greatest width, ischium lacking spinous ridge on internal surface except for 3–4 proximally-directed free spines at proximal end; propodus expanded, width 0.73 times width of merus, with small rounded lobe distoventrally; width of dactylus 0.25 times width of propodus.

Ischium of large cheliped of male slightly expanded distoventrally, ventral margin with series of 23 rounded denticles, smallest proximally. Length of merus 1.6–1.8 times greatest width, proximal end of dorsal margin raised, with inconspicuous rounded denticles; ventral margin expanded, forming triangular keel, concave and entire proximally, remainder of margin with about 17 rounded serrations. Length of carpus 1–1.1 times length of merus, carpus width 0.75–0.95 times length, wider medially due to convex proximal margin; ventral margin of carpus inconspicuously serrate on inner surface, serrations separated by short fringes of setae. Length of palm 1.2–1.4 times length of carpus, palm length 1.35–1.6 times width, ventral margin weakly serrate on inner surface. Propodal finger blunt, curving slightly inward, cutting edge with three acute, triangular teeth proximally, two moderately strong rounded teeth medially, six low rounded teeth distally; series of blisters running along internal surface of finger. Length of dactylus 0.5 times length of palm, cutting edge with two irregular, truncate teeth proximally, series of 10 rounded teeth distally. Internal surface of dactylus with series of blisters interspersed with tufts of hair, dorsal margin similar, blisters more acute.

Large cheliped sexually dimorphic. Ventral margin of ischium of cheliped of female with several inconspicuous denticles. Length of merus 1.5–2.0 times width, dorsal margin convex, ventral keel present but not as strong as in male, fewer denticles on margin distally. Length of carpus 0.9–1.1 times length of merus, length of carpus 0.9–1.3 times width, ventral margin entire. Palm longer (1.05–1.55) than carpus, longer than wide (1.02–1.4), ventral margin entire. Propodal finger blistered on internal surface below cutting edge, cutting edge with proximal series of small triangular teeth, strong triangular tooth proximal to midpoint of edge, distal series of approximately 10 small rounded teeth decreasing in size toward tip. Small multilobed projection at base of notch between fingers. Dactylus narrow, curving inward, length 0.65–0.95 times length of palm, low serrate ridge running transversely across cutting edge proximally, remainder of edge straight, inconspicuously

TABLE 1. Branchial Formula of *Callinassa trilobata*.

Gill type	Maxillipeds			Walking legs				
	1	2	3	1	2	3	4	5
Pleurobranchs	—	—	—	—	—	—	—	—
Arthrobranchs	—	*	2	2	2	2	2	—
Podobranchs	—	—	—	—	—	—	—	—

* A single rudimentary gill may be present.

serrate; internal surface with scattered blisters, dorsal margin lacking blisters found in male.

Ischium of small cheliped lacking ventral serrations. Merus with simple convex dorsal margin, ventral margin lacking keel or denticles. Carpus narrow, length 2.5 times width. Palm shorter than carpus, narrowing distally. Propodal finger long and thin, cutting edge entire. Dactylus straight, narrow, cutting edge entire.

Propodus of third pereopod (P3) bilobed, posterior lobe wide, rounded, ventral margin concave. P4 subchelate, P5 chelate. Branchial formula shown in Table 1, second maxilliped with rudimentary arthrobranch.

Abdomen elongate, well developed. First abdominal somite divided by transverse dorsal ridge, anterior 0.2 of somite narrow, rounded anteriorly, posterior area widening toward posterior margin. Well developed fringe of hair on posterolateral margins of third and fourth somites, length of fringes 0.25 times somite width. Fifth somite with similar fringe midlaterally. Lateral margin of sixth somite distinctly bilobed by strong transverse groove separating anterior three quarters from posterior quarter; lateral margin of anterior lobe inconspicuously bilobed with indentation occurring one-third length of lobe from anterior margin; posterior margin of somite indented.

Telson distinctly wider (1.14–1.6) than long, lateral margins trilobed; posterior margin concave centrally.

First pleopod of male uniramous, two-segmented, distal segment with acute tip, rounded prominence distolaterally. Second pleopod of male biramous, exopod bladeliike, acute at tip, 0.78 times length of first segment of endopod. First segment of endopod bladeliike, wider than exopod; second segment triangular with acute distal tip; third segment small, elongate, articulating laterally at junction of first and second segments. First pleopod of female uniramous, two-segmented, distal segment thick at base, bladeliike distally. Second pleopod biramous, exopod bladeliike, shorter than first segment of endopod. Endopod two-segmented, first segment bladeliike, projecting slightly at distal tip and forming subchela with small, elongate second segment. *Appendix interna* of third through fifth pleopods subtriangular in outline, hooks located along lateral surface.

Endopod of uropod elongate oval, length 1.5–1.95 times width, narrowing distally, fringe of fine setae along distal half of posterior margin, denser fringe at distal tip. Exopod of uropod slightly longer than endopod, lower exopodal plate longest posteriorly, with dense fringe of setae. Single basal spine present. Suture distinct. Upper exopodal plate 0.6 times length of lower plate.

Color: Entire animal white. Eye of fresh specimen with white spot in center of pigmented area.

Dimensions of Holotype: EJ-68-2 (FBCML), ♂. Total length 76 mm, carapace length 17 mm. Telson width 5.0 mm, length 4.4 mm. Width of endopod of uropod 3.5 mm, length 5.9 mm. Large cheliped: width of merus 5.9 mm, length 10.6 mm; width of carpus 9.0 mm, length 11.9 mm; width of propodus 8.9 mm, length 14.2 mm; length of dactylus 7.25 mm.

Known Range: Miami and Tampa Bay, Florida.

Discussion: There are similarities between the cheliped of this species and that of *C. audax* de Man, but the species can be distinguished by the form of the telson, shape of the eyestalks and endopod of the uropod, and the keel on the merus of the large cheliped in *C. trilobata*.

Remarks: Two specimens are known which, because they exhibit characters usually associated with the male (form of the large cheliped and the pleopods), have been termed males and described as such. However, both specimens have male and female coxal apertures. The reason for this phenomenon is not yet apparent.

Etymology: The name is derived from the lateral contours of the telson.

***Callianassa quadracuta* new species**

Figure 2

Holotype: 1 ♂, 68 mm; Venezuela, Cumaná; 1859; J. P. Couthouy. MCZ 760.

Paratypes: 1 ♂, 75 mm, 2 ♀ ♀, 27–39 mm, 1 ovigerous ♀, 62 mm; Venezuela, Cumaná; 1859; J. P. Couthouy. MCZ 760.

1 ♂, 69 mm, 1 ♀, 74.5 mm, 2 damaged ♀ ♀; Venezuela, Cumaná; 1859; J. P. Couthouy. MCZ 732.

1 ovigerous ♀, 70 mm; Venezuela, Cumaná; 1859; L. Agassiz. MCZ 12872.

Diagnosis: Chelipeds of first walking legs subequal, carpus with two acute distodorsal and two acute distoventral projections, distodorsal corner of palm an acute projection. Endopod of uropod triangular, extending well beyond distal margin of telson. Telson distinctly wider than long. Dactylus of third maxilliped expanded distally, width 0.75–0.9 times width of propodus.

Description: Carapace with two weak ridges dorsally, one on either side of midline running parallel to body axis, terminating before reaching front. Short median ridge narrowing anteriorly, continuous with rostrum.

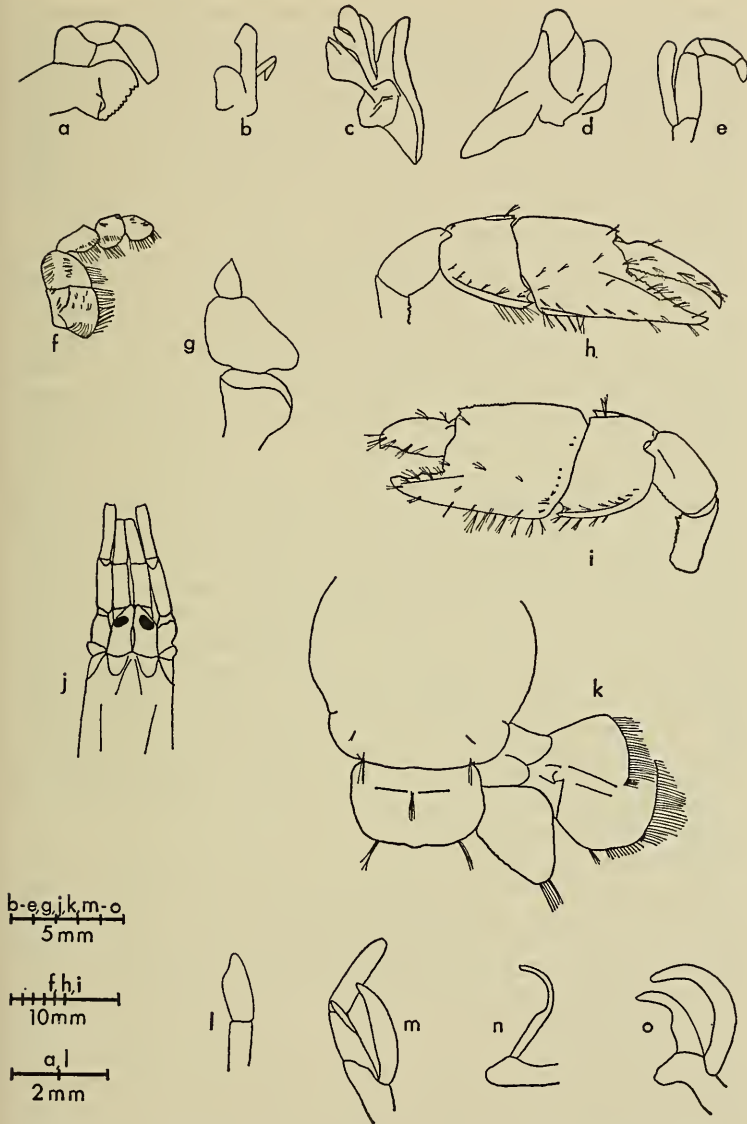


FIG. 2. *Callianassa quadracuta*: a, mandible; b, first maxilla; c, second maxilla; d, first maxilliped; e, second maxilliped; f, third maxilliped; g, P3; h, small cheliped; i, large cheliped; j, dorsum; k, tail fan; l, male first pleopod; m, male second pleopod; n, female first pleopod; o, female second pleopod.

Convex area as wide as eyestalk located over base of eye, narrowing posteriorly. Posterior area of carapace with ridge along dorsal midline.

Rostrum a low acute triangle extending 0.1–0.2 times length of eyestalks, slightly depressed. Lateral projections low rounded triangles at external margin of eyestalks. Eyestalks flattened, extending beyond distal margin of first antennular segment, length 1.8–2.8 times width; lateral margins indistinctly concave; distal margin straight, median projection denticulate at tip; cornea lateral, subterminal, covering about 0.1 exposed dorsal surface of eyestalks.

Length of third antennular segment 0.75–0.95 times length of second segment. Third antennular segment 0.6–0.8 times length of fourth antennal segment. Fourth antennal segment 1.06–1.5 times length of fifth segment. Antennal flagellum 2.5–4.35 times length of antennular. Second antennular segment extending to 0.9 length of fourth antennal segment. Third antennular segment to 0.75 fifth antennal segment. Second and third antennular segments with dense rows of elongate setae laterally.

Basis of mandible wide, first segment of palp shorter than second segment, incisor process with 10 truncate teeth, some inconspicuously serrate, molar process entire, bifurcate ventrally. Basal endite of first maxilla slightly expanded distally, distal margin straight; coxal endite with indication of distal lobe. Epipod of first maxilliped triangular, narrowly rounded distally; basal endite rounded; internal margin of exopod indented. Exopod of second maxilliped longer (1.3) than first segment of endopod. Merus and ischium of third maxilliped wide, length of both segments 1.55–1.85 times greatest width of either segment, spinous ridge on ischium with seven free spines distally, distal-most largest, remainder of ridge with about eight denticles; propodus not expanded, width 0.6–0.7 times width of ischium; width of dactylus measured proximally 0.35 times width of propodus, 0.75–0.9 times if width of dactylus measured distally.

Chelipeds of first pereiopods subequal. Ischium of left cheliped short, with 18 subacute denticles ventrally, longer spine near distal end. Merus with two inconspicuous denticles proximally on ventral margin, five denticles medially, length of merus 1.53–1.74 times width. Carpus shorter (0.8–0.9) than merus, length 0.65–0.85 times width, dorsal margin cristate proximally, divided on external surface distally forming two acute projections, one above the other, at distodorsal corner; ventral margin entire, secondary ridge just above margin on external surface, terminating distally as acute projection, second acute projection just above ventral-most articulation with palm. Palm longer (1–1.32) than wide, longer (1.6–1.96) than carpus; ventral margin of palm entire, rounded, dorsal margin cristate on proximal half, distal half with minute denticles, terminating distally as acute projection; distal margin of palm inconspicuously serrate along articulation with dactylus, slightly blistered behind notch between fingers. Series of raised tufts of hair on external

surface of palm near proximoventral articulation. Propodal finger strong, blunt at tip, much shorter than dactylus, series of 15 rounded denticles proximally on cutting edge ending at median triangular tooth, remainder of cutting edge inconspicuously serrate. Weak ridge running along outer surface below cutting edge and for short distance on palm. Dactylus strong, length 0.6–0.75 times length of palm, blunt and curving inward distally; cutting edge entire on proximal third, serrate on remainder.

Ischium of right cheliped as in left, ventral margin with 16 irregular denticles and single spine near distal end. Merus as in left, length 1.45–1.8 times width. Carpus as in left with four acute projections distally, length 0.76 times width, length 0.85–0.95 times length of merus. Length of palm 1.17–1.52 times length of carpus, notably shorter and more oblique than palm of left cheliped, dorsal margin lacking distal serrations, ridge on propodal finger and palm more distinct. Propodal finger subacute distally, curving slightly inward, cutting edge with 10 irregular serrations. Dactylus slender, subacute distally, length 1.05–1.2 times length of palm, cutting edge with series of rounded denticles decreasing in size distally. For practical purposes, this cheliped termed small cheliped.

Propodus of P3 with narrow rounded lobe posteriorly, anterior margin slightly convex, segment about as long as broad. P4 simple, P5 chelate. Branchial formula as in *C. trilobata*, all gills well developed, gill of second maxilliped with lamellae.

First abdominal somite divided by transverse ridge; anterior quarter subrectangular, widening posteriorly; margins of posterior area diverging and continuing laterally almost to level of pleopod articulation before reaching posterior margin of somite. Third and fourth somites with well developed fringe of hair posterolaterally on dorsal surface. Fifth somite with well developed midlateral fringe. Lateral margin of sixth somite bilobed, anterior lobe distinctly wider than posterior, lateral margins convex; posterior lobe separated from anterior by lateral indentation, lacking well defined groove; posterior margin of somite with hint of indentation at midline, stronger indentation just beyond tufts of hair.

Telson distinctly wider (1.46–1.76) than long; lateral margins with slight indentation in anterior third, remainder convex; posterior corners smoothly rounded, posterior margin with median convex projection. Dorsal surface of telson convex, distinct transverse ridge on proximal half interrupted medially by tuft of hair.

First pleopod of male uniramous, two-segmented, distal segment elongate, rounded distally, slight indentation on internal margin. Second pleopod of male biramous, exopod bladeliike, subacute at tip. Endopod two-segmented, proximal segment with pliable flap running along distal half of lateral margin, distal segment bladeliike, rounded at tip. First pleopod of female uniramous, two-segmented, proximal segment extending horizontally beyond level of articulation of second seg-

ment; distal segment bladelike, thicker proximally, rounded at tip. Second pleopod of female biramous, peduncle extending horizontally beyond level of articulation of endopod; exopod bladelike, curving inward, longer than endopod; endopod bladelike, thicker proximally, with only one segment. *Appendix interna* of third through fifth pleopods subtriangular with hooks along lateral surface.

Endopod of uropod triangular, length 1.2–1.7 times width, distal tip extending 2.1 times length of telson beyond posterior margin of telson; margins slightly irregular due to widely spaced setae, dense fringe of setae at distal tip. No median ridge. Exopod of uropod longer than endopod, upper exopodal plate with dense fringe of setae, posterodistal margin with two rows of approximately 14 strong setae. Suture distinct. Lower plate fringed with both hair and setae distally, strong short setae forming dorsal row; posterior corner with row of 12 strong spine-like setae. Ridge lacking, one strong basal spine present.

Color: Thorax and chelipeds white, remainder unknown in fresh material, entire animal beige when preserved in alcohol.

Dimensions of Holotype: MCZ 760, ♂. Total length 68 mm, carapace length 17 mm. Telson width 5.5 mm, length 3.75 mm. Width of endopod of uropod 2.75 mm, length 4.5 mm. Left cheliped: width of merus 4.25 mm, length 6.85 mm; width of carpus 8.4 mm, length 5.9 mm; width of propodus 9.5 mm, length 10.9 mm; length of dactylus 6.6 mm. Right cheliped: width of merus 4.0 mm, length 6.4 mm; width of carpus 8.0 mm, length 6.1 mm; width of propodus 8.4 mm, length 8.5 mm; length of dactylus 10.0 mm.

Known Range: SE Florida, Venezuela.

Discussion: This species appears to be closely related to *C. aequimana* Baker from Australia and to *C. novaebritanniae* Borradaile and its variety which was described by de Man (1928). De Man separated the two species and the variety based on the telson morphology, size, morphology, of the ischium of the large cheliped, and several less distinctive characters. As Sakai (1966) noted, for practical purposes, the ridge on the dorsal surface of the telson is most useful. *Callianassa quadracuta*, like *C. aequimana*, has a notched ridge, while *C. novaebritanniae* has a continuous weak ridge, and the variety lacks any ridge. In addition, the acute distal projections on the carpus of the cheliped and the convex posterior border of the telson separate *C. quadracuta* from all these Pacific forms.

Only one other species, *Callianassa laticauda* Otto, has been described as having a relatively well-developed gill on the second maxilliped (Gurney, 1944). The significance of the character is unknown since the branchial formula has been described for only a small number of species of *Callianassa*. No other characters relating *C. laticauda* and *C. quadracuta* are immediately apparent.

Etymology: The name of the species is derived from the acute projections on the carpus of the chelipeds.

Callianassa fragilis new species

Figure 3

Holotype: 1 ♂, 27 mm; Puerto Rico, Punta Arenas, sand flat; 12 June 1946; H. C. Hewatt. USNM 82367.

Paratypes: 1 damaged ♂; data as in holotype.

1 ♀, 16.5 mm; Antigua, Falmouth Bay, Black's Point; 30 April 1959; Smithsonian Bredin Expedition 112-59. USNM.

2 ♂♂, 39-40 mm; Venezuela, Cumaná; 1859; Capt. Couthouy. MCZ 760.

Additional specimens have been collected around Miami and have been deposited in the collection at the University of Miami Marine Institute.

Diagnosis: Total length less than 45 mm. Merus of large cheliped with proximal hook directed distally. Third segment of antennule extending beyond distal end of fifth antennal segment. Telson shield-shaped, with posteromedian concavity. Endopod of uropod wide oval, extending beyond posterior margin of telson.

Description: Rostrum and lateral projections rounded triangles. Rostrum extending only 0.07-0.23 times length of eyestalks. Lateral projections just beyond margin of eyestalks, not extending as far anteriorly as rostrum. Eyestalks elongate, extending almost to end of first antennular segment, length 2.2-2.7 times width; lateral margin more or less straight, directed at slight oblique angle inward; distal margin straight, more inwardly directed, with internal triangular projection; pigmented area central, subterminal, covering about 0.05 exposed dorsal surface of eyestalks, irregular in shape.

Length of third antennular segment 2.2-3.7 times length of second antennular segment. Third antennular segment 1.25-1.7 times length of fourth antennal segment. Fourth antennal segment 1.15-1.55 times length of fifth antennal segment. Antennal flagellum 2.75-4.2 times length of antennular. Second antennular segment extending to 0.55 length of fourth antennal segment. Third antennular segment to just beyond distal end of fifth antennal segment. Second and third antennular segments moderately fringed with setae on lateral surfaces.

Mandible with 12 teeth in incisor process, teeth progressively larger toward ventral end, molar process with two strong ventral teeth and four smaller teeth dorsally. Basal endite of first maxilla expanded distally, rounded; coxal endite narrow, with small rounded distal lobe. Basal endite of first maxilliped convex distally; exopod squared distally, with indentation on internal margin; epipod lacks distal acute projection, narrowly rounded laterally. Exopod of second maxilliped only 0.75 times length of first segment of endopod. Merus and ischium of third maxilliped wide, length of segments 1.4-1.6 times greatest width, internal surface of ischium with 16 weak denticles; merus subrectangular, disto-ventral area a rounded corner; propodus only slightly expanded proxi-

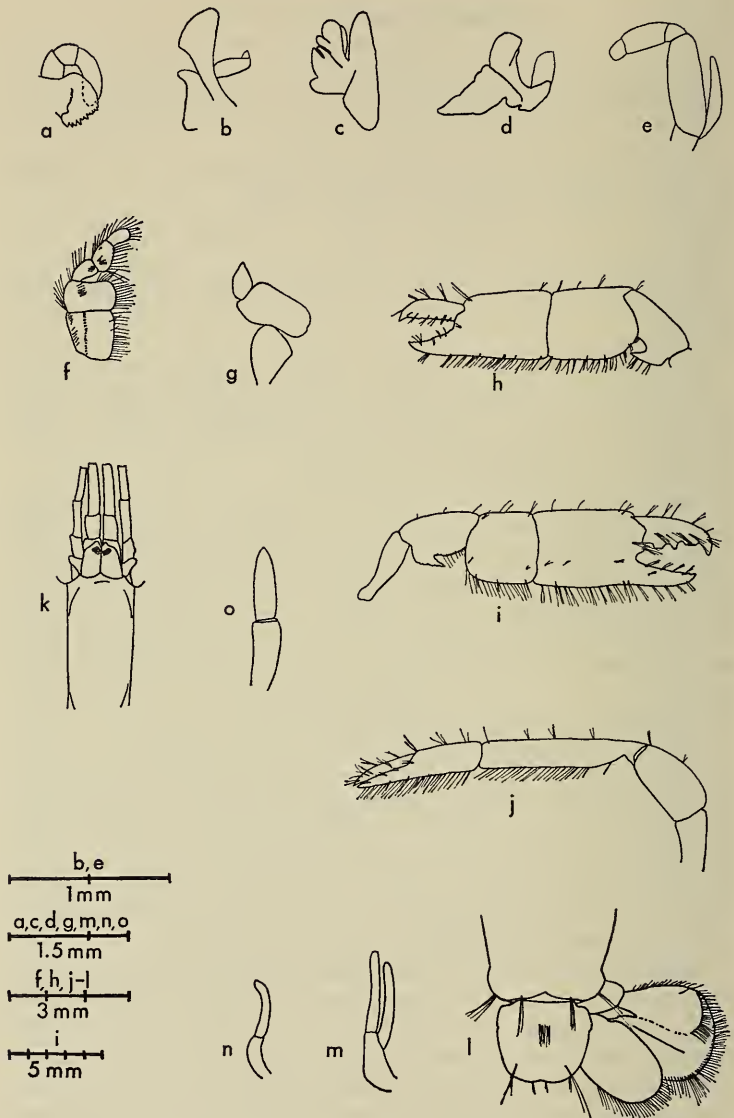


FIG. 3. *Callianassa fragilis*: a, mandible; b, first maxilla; c, second maxilla; d, first maxilliped; e, second maxilliped; f, third maxilliped; g, P3; h, female large cheliped; i, male large cheliped; j, small cheliped; k, dorsum; l, tail fan; m, female second pleopod; n, female first pleopod; o, male first pleopod.

mally, width 0.43 times width of merus; width of dactylus 0.4–0.67 times width of propodus.

Ischium of large cheliped of male with five broad, inconspicuous serrations ventrally. Merus more than twice (2–2.2) as long as wide, proximoventral margin produced into distally directed hook, hook with 3–4 strong serrations ventrally, acute tip; remainder of ventral margin with 11 denticles separated by tufts of hair. Length of carpus 0.68–0.9 times length of merus, longer medially due to convex proximal margin; width of carpus 1.1–1.4 times dorsal length, ventral margin entire. Palm longer (1.3–1.8) than carpus, length greater (1.15–1.3) than width, ventral margin entire. Propodal finger shorter than dactylus, cutting edge entire. Notch between fingers rounded, extending proximally for a short distance. Dactylus 0.6–0.82 times length of palm, truncate teeth proximally and distally with three or four rounded serrations on cutting edge of distal tooth, proximal tooth entire or serrate, triangular tooth medially. Tip of dactylus strongly curved, not hooked.

Ischium and merus of female cheliped like those of male. Carpus longer than wide (1.14–1.22), length equalling length of merus, almost (0.9–0.95) as long as palm. Palm narrowing distally, slightly narrower than carpus. Propodal finger serrate along cutting edge, notch between fingers not extending proximally. Dactylus slightly curved, lacking strong dentition, cutting edge serrate.

Ischium and merus of small cheliped lacking ventral denticles. Ventral margin of merus inconspicuously concave proximally, lacking hook. Carpus elongate, length 5–6 times width. Palm narrow, length 0.4 times length of carpus, notch not extending proximally. Propodal finger almost as long as dactylus, minute serrations on cutting edge. Dactylus straight, cutting edge entire.

Propodus of P3 bilobed, dactylus with acute tip. P4 simple, P5 chelate. Branchial formula as in *C. trilobata*, second maxilliped lacking rudimentary gill.

First abdominal somite short, lacking any transverse ridge. Third somite with tuft of hair in posterolateral corner. Fourth somite with midlateral tuft. Fifth somite with tuft of hair in anterior third of lateral margin. Lateral margin of sixth somite weakly bilobed, margins of anterior 0.75 slightly convex, fringed with fine hair, separated from posterior rounded lobes by indistinct groove; posterior margin indented medially.

Telson shield-shaped, width 1.16 times length, median concavity in posterior margin; lateral margins convex, slight notch 0.25 total length from proximal end, remainder of margin smoothly rounded; tuft of elongate setae on dorsal surface set back from each posterior corner.

First pleopod of female uniramous, two-segmented, distal segment bladeliike, rounded at tip. Second pleopod biramous, exopod bladeliike, rounded at tip, shorter than endopod (0.88); endopod similar, with transverse articulation 0.65 total length from proximal articulation. First

TABLE 2. Morphological Characteristics of *Callianassa atlantica* and *C. fragilis*.

Characteristic	<i>C. atlantica</i>	<i>C. fragilis</i>
Telson posterior border	acute median projection	median indentation
Eyestalk	beyond 1st antennular segment	shorter than 1st antennular segment
Eyestalk projection	slender, curving	short, rounded
3rd antennular segment	3.6-5.3	2.2-3.7
2nd antennular segment		
large cheliped fingers	about equal	dactylus longer
small cheliped carpus length/width	3.6-4.0	4.5-5.1
dactylus of 3rd maxilliped	slender	wide

pleopod of male uniramous, two-segmented, distal segment elongate, subacute at tip. No indication of second pleopod. (Holotype lacking pleopods on first and second abdominal somites.) *Appendix interna* of third through fifth pleopods subtriangular, hooks only on small area of lateral surface near apex.

Endopod of uropod wide oval, length 1.6 times width, extending 0.33 times length of telson beyond posterior margin of telson. Exopod of uropod extending just beyond endopod. Upper exopodal plate 0.8 times length of lower plate. Suture indistinct. Lower exopodal plate with dense distal fringe of setae, posterior corner with eight strong setae, anterior margin fringed with hair. No basal spine.

Color: Transparent except for subcutaneous yellow-orange on dorsal abdominal surface and white chelipeds.

Dimensions of Holotype: USNM 82367, ♂. Total length 27 mm, carapace length 6 mm. Telson width 2.25 mm, length 1.95 mm. Width of endopod of uropod 1.55 mm, length 2.5 mm. Large cheliped: width of merus 2.0 mm, length 4.25 mm; width of carpus 3.9 mm, length 2.9 mm; width of propodus 4.0 mm, length 5.25 mm; length of dactylus 4.3 mm.

Known Range: SE Florida, Puerto Rico, Antigua, Venezuela.

Discussion: *Callianassa atlantica* Rathbun is the only other western Atlantic species known which has a hook on the merus of the large cheliped. The two species appear to be closely related; both have an elongate third antennular segment, similar telson shapes, similar female pleopods, and both lack spinous frontal projections and male second pleopods. Table 2 shows several characters which can be used to separate the species.

Remarks: This species is found in shallow burrows in sand, mud, or clay, where it lives in close proximity to burrows of other species of *Callianassa* or *Upogebia*. When excavating around burrows of other species, it is not uncommon to find specimens of *C. fragilis* floating in water that has seeped into the hole. The animal apparently is affected by surface tension and can escape only after a prolonged struggle.

Etymology: The name reflects both the great ease with which the large cheliped becomes separated from the body and the small size of the species.

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